

REMARKS

Claims 485-502 and 504 are pending in the application. Support for “SAM” can be found throughout the application, in particular at page 25 in the specification. Therefore, no new matter has been inserted into the application.

Rejection Under 35 U.S.C. §112, Second Paragraph

Claims 485 and 503 have been rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicants traverse this rejection. Reconsideration and withdrawal thereof are respectfully requested.

The Examiner has criticized claim 485 for lacking clarity for the phrase “determining the immobilization” of the first and second colloidal particles. Applicants submit that a person of skill in the art would be able to detect the immobilization using whichever technique may be available to do so. Therefore, it is believed that this rejection has been overcome.

Claim 503 has been criticized for reciting allegedly confusing language. Applicant disagrees with this criticism. However, claim 503 has been cancelled. Therefore, this rejection has been overcome.

Rejection Under Double Patenting

Claim 276 has been rejected under the doctrine of double patenting as being unpatentable over claim 1 of copending Application No. 10/763,810. Applicants traverse this rejection. Reconsideration and withdrawal thereof are respectfully requested. Applicant respectfully requests the Examiner to hold this rejection in abeyance until either of these patent applications are otherwise in condition for allowance.

Rejection Under 35 U.S.C. §102(b) over Liberti et al. (US 5,108,933)

Claim 485 has been rejected under 35 U.S.C. §102(b) as being anticipated by Liberti '933. Applicants traverse this rejection. Reconsideration and withdrawal thereof are respectfully requested.

Liberti '933 discloses that the colloidal particles are converted into magnetic microagglomerates via manipulation of their colloidal properties. Liberti '933 further discloses that separation takes place before determining the immobilization of the first colloid particle with the second colloid particle.

Applicants submit that the Liberti '933 reference fails to disclose or suggest the presently claimed invention directed to a method for immobilizing colloid particles comprising: allowing a first colloid particle to become immobilized with respect to a second colloid particle by binding interaction between a first chemical or biological species fastened to the first colloid particle and a second chemical or biological species fastened to the second colloid particle; and determining the immobilization of the first colloid particle with respect to the second colloid particle by a signaling entity.

Moreover, Liberti '933 fails to disclose using a signaling entity sub-micron particle for the detection of various biological components in a sample. Further, Liberti '933 discloses particles which are not coated with a self-assembled monolayer; and these particles have no signaling ability. Accordingly, the presently claimed invention fails to be anticipated by Liberti '933.

Rejection Under 35 U.S.C. §102(b) over Masson et al. (US 4,279,617)

Claim 485 has been rejected under 35 U.S.C. §102(b) as being anticipated by Masson '617. Applicants traverse this rejection. Reconsideration and withdrawal thereof are respectfully requested.

Masson '617 discloses a particle agglutination assay for antigens, antibodies, and other binding proteins. The first particulate reagent binds with the antigen or antibody, and then the second particulate reagent is added which binds only to the first reagent particles which has bound to the antigen or antibody under assay, which causes agglutination.

Masson '617 fails to disclose or suggest the presently claimed invention directed to a method for immobilizing colloid particles comprising: allowing a first colloid particle to become immobilized with respect to a second colloid particle by binding interaction between a first chemical or biological species fastened to the first colloid particle and a second chemical or biological species fastened to the second colloid particle; and determining the immobilization of the first colloid particle with respect to the second colloid particle.

Moreover, Masson '617 fails to disclose using a sub-micron particle for the detection of various biological components in a sample. Further, Masson '617 discloses particles which are not coated with a self-assembled monolayer; and these particles have no signaling ability. Therefore, Masson '617 fails to anticipate the presently claimed invention.

Rejection Under 35 U.S.C. §102(e) over Mirkin et al. (US 6,984,491)

Claims 485-487, 489, 492-502 and 504 have been rejected under 35 U.S.C. §102(e) as being anticipated by Mirkin '491. Applicant traverses this rejection. Reconsideration and withdrawal thereof are respectfully requested.

Mirkin '491 discloses placing DNA on nanoparticles. However, Mirkin '491 fails to disclose or suggest using self-assembled monolayers (SAM) on the surface of the nanoparticles. Therefore, the Mirkin reference discloses only the aggregation of colloids, which cannot be used for detecting single interactions as in the presently claimed invention. Therefore, the presently claimed invention, which recites using SAM-coated colloids, is novel over Mirkin '491.

Rejection Under 35 U.S.C. §103(a) over Mirkin et al. (US 6,984,491)

Claims 490 and 491 have been rejected under 35 U.S.C. §103(a) as being “obvious” over Mirkin '491. Applicant traverses this rejection. Reconsideration and withdrawal thereof are respectfully requested.

Mirkin '491 has been discussed above. The deficiency in Mirkin '491 is that Mirkin '491 fails to disclose or suggest coating its colloid with SAM. Therefore, any attempt to modify this teaching to arrive at the presently claimed invention fails because simply Mirkin '491 fails to contemplate or suggest using SAM-coated nanoparticles. Therefore, the presently claimed invention is not obvious over the cited reference.

Rejection Under 35 U.S.C. §103(a) over Mirkin in view of Went (US 6,150,179)

Claim 488 has been rejected under 35 U.S.C. §103(a) as being “obvious” over Mirkin in view of Went '179. Applicant traverses this rejection. Reconsideration and withdrawal thereof are respectfully requested.

Mirkin '491 is discussed above and its deficiencies have been noted above as well. Went '179 is cited for the disclosure of a metal affinity binding tag. However, the Mirkin '491 reference fails to disclose or suggest using a SAM-coated colloid, and thus the combination of

Mirkin '491 and Went '179 fails to arrive at the presently claimed invention. Therefore, this presently claimed invention is not obvious over the cited references.

Conclusion

It is believed that the application is now in condition for allowance. Applicant requests the Examiner to issue a notice of Allowance in due course. The Examiner is encouraged to contact the undersigned to further the prosecution of the present invention.

The Commissioner is authorized to charge JHK Law's Deposit Account No. 502486 for any fees required under 37 CFR §§1.16 and 1.17 that are not covered, in whole or in part, by a credit card payment enclosed herewith and to credit any overpayment to said Deposit Account No. 502486.

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Respectfully submitted,

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